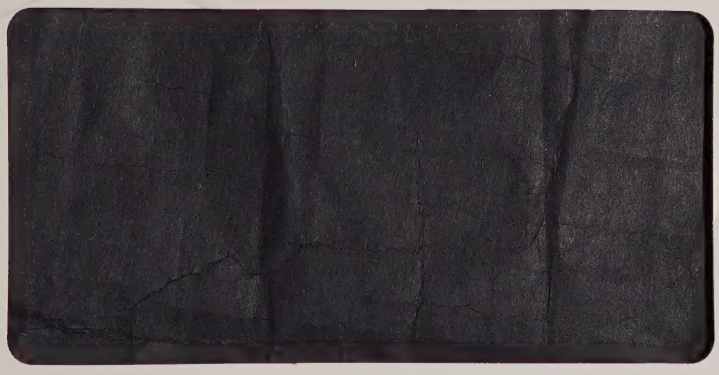
BEHLMAN



BEHLMAN

OSCILLATOR SPECIFICATIONS
VARIABLE FREQUENCY

MODEL NUMBER: OSN - * - 45/2500

PART NUMBER : 106-410-300

(*) : 1-phase or 3-phase

FOR SERVICE ASSISTANCE

CONTACT BEHLMAN
CUSTOMER SERVICE DEPARTMENT

PHONE TOLL FREE 1-800-874-6727

OR WRITE

BEHLMAN
CUSTOMER SERVICE DEPARTMENT
80 CABOT COURT
HAUPPAUGE, NY 11788

PHONE: (516) 435-0410
FAX : (516) 951-4341

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DATE: 03/95

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SECTION 5	PARTS LISTS AND DRAWINGS	DRAWING NO.
	SCHEMATIC DIAGRAM	106-405-001
	COMPONENT DIAGRAM	106-405-100
	WIRING DIAGRAM	106-421-300
	DISPLAY BOARD SCHEMATIC DIAGRAM	106-418-000
	DISPLAY BOARD COMPONENT	106-420-000

SECTION 1

INTRODUCTION

1.1 GENERAL DESCRIPTION

The reference oscillator used to control the frequency and voltage of the power amplifiers can be configurable in single phase, two phase (0°, 90°) and three phase (0°, 120°, 240°) options. Voltage and frequency can be adjusted either by front panel mounted potentiometers or by an externally applied DC voltage (0-1.0 Vdc).

Synchronization of the oscillator output with an externally applied signal is also possible. The sync signal should be approximately 3 Vrms and a frequency between 45Hz and 10KHz.

1.2 SPECIFICATIONS

FREQUENCY: 45/2500 Hz

ACCURACY: 0.01%

OUTPUT: Output voltage of Bϕ is 120° out of phase with the output voltage of Aϕ.

1.3 OPTIONS

-08A	Remote Front Panel Controls.
-08B	Remote/Local Switch.
-10F	Oscillator lock pots, frequency.
-10V	Oscillator lock pots, voltage.
-11	Original style Behlman connectors oscillator.
-15	Adjustable Phase Shift.

SECTION 2

INSTALLATION

The reference oscillator is designed to plug into the front panel of any Behlman ACM Power Source and has been installed in the unit by the manufacturer.

SECTION 3

OPERATION

3.1 TO OPERATE THE EQUIPMENT

1) Be sure LINE circuit breaker and all controls of power source are in the OFF position.

2) Connect suitable loads across terminals. (Do not exceed rating of unit).

3) Place LINE circuit breaker in ON position.

4) Rotate FREQ. ADJ. control clockwise until desired frequency is obtained. Frequency can be observed on the digital display meter. See Figure 1.

5) Rotate VOLTS ADJ. control clockwise until desired voltage is obtained, as observed on output voltmeter. See Figure 1.

6) Place OUTPUT switch to ON position to energize load.

3.2 SHUTDOWN PROCEDURE

1) Place OUTPUT switch of power source in OFF position.

2) Rotate VOLTS ADJ. control fully counterclockwise.

3) Place LINE circuit breaker in OFF position.

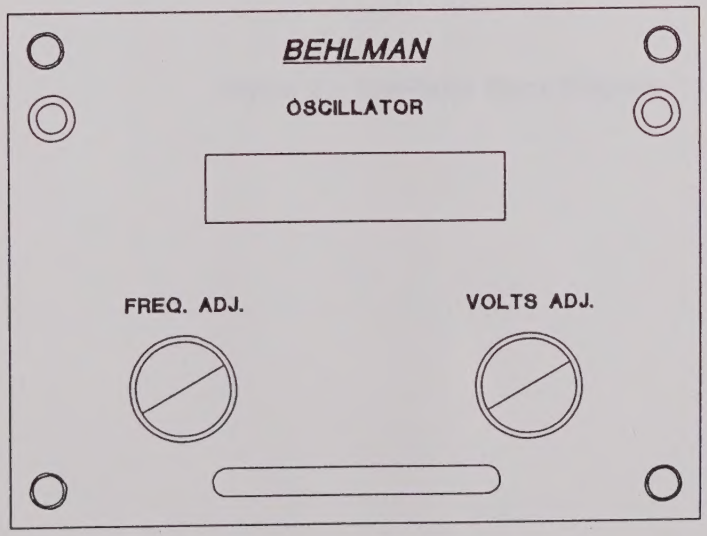


Figure 1. Oscillator Front Panel

SECTION 4

THEORY OF OPERATION

4.1 ELECTRICAL DESCRIPTION

In generation of its outputs, the reference oscillator uses digital techniques. As shown in Figure 2, an 8-bit counter addresses a PROM that has a sine function stored in its memory. The PROM output feeds a multiplying digital-to-analog converter whose sinewave output varies in direct proportion to the DC reference input. An eight-bit counter in the feedback of a phase-locked loop allows the oscillator to be controlled bt either an on-board VCO or an external sync signal. Additional PROMS with different phase location of the sine function and M-DACs generate second and third outputs.

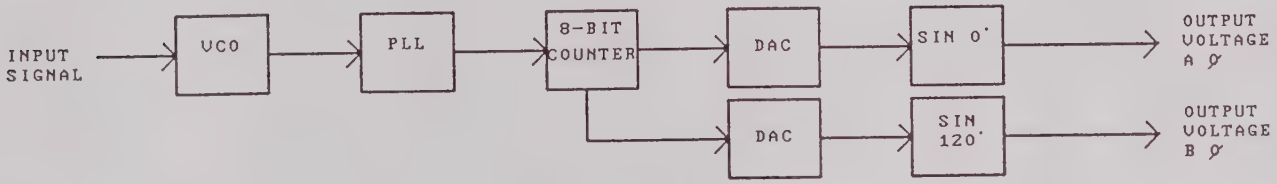


Figure 2. Oscillator Block Diagram

INDENTED LEVEL BILL FOR ITEM 106-410-300 OSC ASSY (OSN-*-45/2.5K) REV:B

LVL	ITEM NUMBER	DESCRIPTION	Q-FLAGGED	UNIT MEA	M P	STYP	QUANTITY
1	106-405-100	OSCILLATOR BD ASSY REV:G		EA	M	S	1.000
2	106-405-100S	P.W.B. ASSY		EA	P	S	1.000
2	106-405-101	P.W.B.		EA	P	S	1.000
2	DEL	DELETED ITEM		EA	M	S	0.000
2	DEL	DELETED ITEM		EA	M	S	0.000
2	106-450-002	HEADER STRAIGHT 2P		EA	P	S	3.000
2	101-383-000	I.C. TI TL084BCN REV:A		EA	P	S	3.000
2	101-446-000	I.C., MC14046BCP REV:A		EA	P	S	1.000
2	106-453-000	IC, 74HC193		EA	P	S	2.000
2	106-607-000	PROGRAMMED PROM SINE 0		EA	P	S	1.000
3	106-610-000	I.C. DM74S472AN(NATIONAL)REV:-		EA	P	S	1.000
3	106-606-000	SOFTWARE LISTING SINE 0		EA	M	S	1.000
2	106-609-000	PROGRAMMED PROM SINE 120		EA	P	S	1.000
3	106-610-000	I.C. DM74S472AN(NATIONAL)REV:-		EA	P	S	1.000
3	106-608-000	SOFTWARE LISTING SINE 120		EA	M	S	1.000
2	106-455-000	I.C. AD7524JN REV:-		EA	P	S	2.000
2	106-456-000	I.C. AD650JN REV:-		EA	P	S	1.000
2	106-457-000	IC, MM74HC4049		EA	P	S	1.000
2	106-458-000	IC, LM311N		EA	P	S	1.000
2	101-463-000	I.C. MC7805CT REV:-		EA	P	S	1.000
2	106-459-000	REGULATOR LM336Z-5.0 REV:-		EA	P	S	1.000
2	106-461-000	DIODE RECT 1N6263 REV:-		EA	P	S	2.000
2	106-462-000	DIODE ZENER 1N965 .5W 15V		EA	P	S	1.000
2	106-463-000	DIODE SWTCH 1N4148 75V REV:-		EA	P	S	2.000
2	106-464-103	POT,CERMET,3296W,MULTI		EA	P	S	1.000
2	106-466-562	RESISTOR, CARB, RCR07, 5.6K		EA	P	S	1.000
2	106-466-273	RESISTOR, CARB, RCR07,27K		EA	P	S	1.000
2	106-466-104	RESISTOR CARB RC07 100K		EA	P	S	1.000
2	106-466-513	RESISTOR CARB RCR07 51K		EA	P	S	2.000
2	106-471-652	RES MF 16.5K 1/8W1% RC55 REV:-		EA	P	S	1.000
2	106-472-432	RES MF 24.3K 1/8W1% RC55 REV:-		EA	P	S	2.000
2	106-475-492	RES MF 54.9K 1/8W 1% RC55		EA	P	S	1.000
2	106-472-492	RES MF 24.9K 1/8W1% RC55 REV:-		EA	P	S	1.000
2	106-472-612	RES MF 26.1K 1/8W 1% RC55		EA	P	S	1.000
2	106-466-102	RES CARB RCR07 1K REV:-		EA	P	S	2.000
2	106-466-512	RESISTOR CARB,RCR07,5.1K		EA	P	S	2.000
2	106-466-105	RESISTOR, CARB, RCR07, 1M		EA	P	S	2.000
2	106-471-002	RES MF 10K 1/8W 1% RC55 REV:-		EA	P	S	12.000
2	9001	REF DESIGNATION		EA	M	S	0.000
2	\9002	REF DESIGNATION		EA	M	S	0.000
2	106-475-762	RES MF 57.6K 1/8W 1% RC55		EA	P	S	1.000
2	106-466-333	RESISTOR, CARB, RCR07, 33K		EA	P	S	1.000
2	106-466-103	RESISTOR, CARB, RCR07, 10K		EA	P	S	3.000
2	106-471-001	RES MF 1K 1/8W 1% RC55 REV:-		EA	P	S	2.000
2	106-464-502	POT,CERMET,3296W,MULTI		EA	P	S	2.000
2	100-588-012	RESISTOR DALE RS2B 25 OHM 5%		EA	P	S	1.000
2	106-502-067	CAP ELEC,10UF 35V		EA	P	S	5.000
2	106-634-102	CAP SILVER MICA DM15 1000PF		EA	P	S	2.000
2	106-481-104	CAP CERAM CKR06 0.1UF REV:A		EA	P	S	6.000
2	\9003	REF DESIGNATION		EA	M	S	0.000
2	106-480-102	CAP CERAM CKR05, 1000PF REV:-		EA	P	S	1.000
2	106-481-334	CAP.CERAM. CKR06. .33UF		EA	P	S	1.000

ENTED LEVEL BILL FOR ITEM 106-410-300 OSC ASSY (OSN-*-45/2.5K) REV:B

ITEM NUMBER	DESCRIPTION	Q-FLAGGED	UNIT MEA	M P	STYP	QUANTITY
106-481-105	CAP 1UF CKR06BX105K REV:A		EA	P	S	2.000
106-480-101	CAP CERAM CKR05 100P REV:-		EA	P	S	1.000
100-130-001	C PLCB .01MF 50V		EA	P	S	2.000
100-128-024	CAP MICA 500V 100PF		EA	P	S	2.000
106-645-004	TERM BLK RT ANG 200 CL 4P		EA	P	S	5.000
106-436-002	TERM BLOCK WIELAND 25.163.0253		EA	P	S	0.000
106-436-003	TERM BLOCK WIELAND 25.163.0353		EA	P	S	0.000
106-642-000	RELAY,DPST,W171DIP-25		EA	P	S	1.000
106-435-000	HEATSINK,TO-220		EA	P	S	1.000
102-491-000	FET BS170 60V .5A		EA	P	S	1.000
106-484-002	SHUNT, 2 POSITION		EA	P	S	0.000
MS51957-13	SCREW PAN HD #4-40 X .25		EA	P	S	1.000
2300019-004	NUT HEX 4-40		EA	P	S	1.000
100-096-006	SKT IC OPEN FRAME 20PIN		EA	P	S	2.000
106-405-001	SCHEMATIC DIA		EA	M	S	0.000
106-471-872	RES MF 18.7K 1/8W 1% RC55		EA	P	S	2.000
100-128-008	CAP MICA 500V 20PF		EA	P	S	1.000
106-408-300	FP OSC (OSN-*-45/2.5K) REV:B		EA	P	S	1.000
106-408-003	FRONT PANEL		EA	P	S	1.000
106-438-322	STANDOFF CLINCH,BLIND		EA	P	S	3.000
106-445-015	CONNECTOR AMP 205206-1		EA	P	S	1.000
DEL	DELETED ITEM		EA	M	S	0.000
106-429-011	POTENTIOMETER 73JB 100K OHMS		EA	P	S	2.000
106-431-000	KNOB SKIRTLESS, INDIC REV:B		EA	P	S	2.000
10[illegible]964-000	FSTNR THUMBSCREW		EA	P	S	2.000
10[illegible]000-001	SCREW PAN HD PHLP 4-40 X .250		EA	P	S	2.000
100-000-007	SCREW PAN HD PHLP 6-32 X .500		EA	P	S	13.000
106-433-006	CONN ELCO 60-9021-3064-10-000		EA	P	S	1.000
100-005-003	WASHER FLAT NYLON #6		EA	P	S	4.000
106-449-229	STANDOFF		EA	P	S	4.000
106-434-000	CONTACT, CONN MATE CRIMP		EA	P	S	6.000
100-962-000	HNDL RND 2.25"		EA	P	S	1.000
LOCTITE	LOCTITE BLUE		AR	P	S	0.000
106-420-000	P.W.B. ASSY. DISPLAY REV: A		EA	M	S	1.000
106-420-000S	P.W.B. ASSY DISPLAY		EA	P	S	1.000
106-419-000	PWB,DISPLAY		EA	P	S	1.000
106-435-000	HEATSINK,TO-220		EA	P	S	1.000
100-007-002	NUT HEX KEP 4-40		EA	P	S	1.000
100-006-002	WASHR LK SPLIT #4		EA	P	S	1.000
100-000-003	SCREW PAN HD PHLP 4-40 X .500		EA	P	S	1.000
100-095-002	I.C. SOCKET SPC TECH 31N-29-19		EA	P	S	5.000
106-432-006	CONN ELCO 00-9021-0611-00-392		EA	P	S	1.000
100-032-000	LED DISPLAY H.P. 5082-7613		EA	P	S	5.000
101-463-000	I.C. MC7805CT REV:-		EA	P	S	1.000
101-368-000	DIODE SWITCHING 1N914B		EA	P	S	1.000
101-506-000	XTAL SRX1092 5.2488MHZ		EA	P	S	1.000
106-531-000	I.C. HARRIS CA3140E		EA	P	S	1.000
101-446-000	I.C., MC14046BCP REV:A		EA	P	S	1.000
101-450-000	I.C. HARRIS CD4518BE		EA	P	S	1.000
101[illegible]89-000	I.C. HARRIS ICM7207AIPD		EA	P	S	1.000
101[illegible]19-000	I.C. HARRIS ICM7208IPI		EA	P	S	1.000
100-588-012	RESISTOR DALE RS2B 25 OHM 5%		EA	P	S	1.000

ENTED LEVEL BILL FOR ITEM 106-410-300 OSC ASSY (OSN-*-45/2.5K) REV:B

ITEM NUMBER	DESCRIPTION	Q-FLAGGED	UNIT MEA	M P	STYP	QUANTITY
100-193-060	RES MF 1% 1/4W 20K OHM		EA	P	S	2.000
100-193-051	RES MF 1% 1/4W 10K OHM		EA	P	S	1.000
100-193-015	RES MF 1% 1/4W 1K OHM		EA	P	S	2.000
100-193-005	RES MF 1% 1/4W 147 OHM		EA	P	S	1.000
100-193-024	RES MF 1% 1/4W 2.61K OHM		EA	P	S	1.000
100-193-074	RES MF 1% 1/4W 51.1K OHM		EA	P	S	1.000
100-193-025	RES MF 1% 1/4W 3.01K OHM		EA	P	S	1.000
100-193-115	RES MF 1% 1/4W 1 MEG OHM		EA	P	S	1.000
100-193-002	RES MF 1% 1/4W 100 OHM		EA	P	S	1.000
106-502-067	CAP ELEC,10UF 35V		EA	P	S	2.000
100-154-000	CAPACITOR AVX SR205E104MAA		EA	P	S	3.000
100-128-005	CAPACITOR MICA CM05		EA	P	S	3.000
106-502-055	CAP. ELEC,22UF 25V		EA	P	S	1.000
100-128-020	CAP MICA 500V 68PF		EA	P	S	1.000
100-128-009	CAP CM05ED240J03		EA	P	S	1.000
106-418-000	SCHEMATIC DIA		EA	M	S	0.000
106-417-000	LENS DISPLAY OSCILLATOR		EA	P	S	1.000
TAPE,D.S.	TAPE, DOUBLE SIDED		EA	P	S	0.000
22 AWG, WHT	WIRE, ELEC.		FT	P	S	0.000
22 AWG, ORG	WIRE, ELEC		EA	P	S	0.000
22 AWG, VIO	WIRE, ELEC.		EA	P	S	0.000
22 AWG, BLK	WIRE, ELEC.		EA	P	S	0.000
22 AWG, RED	WIRE, ELEC		FT	P	S	0.000
106-409-000	LABEL, IDENT		EA	P	S	1.000
106-421-300	WIRE DIAG		EA	P	S	0.000
106-422-300	TEST SPEC		EA	P	S	0.000
106-442-000	PLATE MOUNTING 15 PIN-D		EA	P	S	1.000
106-442-001	PLATE, MOUNTING		EA	P	S	1.000
106-438-126	STANDOFF, CLINCH, BLIND		EA	P	S	2.000
106-447-000	CONTACT AMP 66506-8		EA	P	S	15.000
106-466-305	RESISTOR, CARB, RCR07, 3M		EA	P	S	1.000
106-464-204	POT,CERMET,3296E,MULTI		EA	P	S	1.000

NGLE LEVEL BILL FOR ITEM 106-405-100 OSCILLATOR BD ASSY REV:G

E O	FND NO	ITEM NUMBER	DESCRIPTION	Q F	UNIT MEA	M/P	STYP	QUANTITY
		106-405-100S	P.W.B. ASSY		EA	P	S	1.000
	2	106-405-101	P.W.B.		EA	P	S	1.000
	3	DEL	DELETED ITEM		EA	M	S	0.000
		DEL	DELETED ITEM		EA	M	S	0.000
		106-450-002	HEADER STRAIGHT 2P DES REF: JP1 - JP3		EA	P	S	3.000
	4	101-383-000	I.C. TI TL084BCN REV:A DES REF: U1,U2,U10		EA	P	S	3.000
	7	101-446-000	I.C., MC14046BCP REV:A DES REF: U3		EA	P	S	1.000
		106-453-000	IC, 74HC193 DES REF: U4,U5		EA	P	S	2.000
	9	106-607-000	PROGRAMMED PROM SINE 0 DES REF: U8		EA	P	S	1.000
		106-609-000	PROGRAMMED PROM SINE 120 DES REF: U6		EA	P	S	1.000
	11	106-455-000	I.C. AD7524JN REV:- DES REF: U7,U9		EA	P	S	2.000
	12	106-456-000	I.C. AD650JN REV:- DES REF: U11		EA	P	S	1.000
		106-457-000	IC, MM74HC4049 DES REF: U12		EA	P	S	1.000
	14	106-458-000	IC, LM311N DES REF: AR1		EA	P	S	1.000
		101-463-000	I.C. MC7805CT REV:- DES REF: VR1		EA	P	S	1.000
	16	106-459-000	REGULATOR LM336Z-5.0 REV:- DES REF: VR2		EA	P	S	1.000
	17	106-461-000	DIODE RECT 1N6263 REV:- DES REF: VR3,4		EA	P	S	2.000
		106-462-000	DIODE ZENER 1N965 .5W 15V DES REF: VR6		EA	P	S	1.000
	19	106-463-000	DIODE SWTCH 1N4148 75V REV:- DES REF: CR1,CR2		EA	P	S	2.000
		106-464-103	POT,CERMET,3296W,MULTI DES REF: R18		EA	P	S	1.000
	21	106-466-562	RESISTOR, CARB, RCR07, 5.6K DES REF: R4		EA	P	S	1.000
		106-466-273	RESISTOR, CARB, RCR07,27K DES REF: R5		EA	P	S	1.000
		106-466-104	RESISTOR CARB RC07 100K DES REF: R11		EA	P	S	1.000
	24	106-466-513	RESISTOR CARB RCR07 51K DES REF: R9		EA	P	S	2.000
		106-471-652	RES MF 16.5K 1/8W1% RC55 REV:- DES REF: R12		EA	P	S	1.000
	26	106-472-432	RES MF 24.3K 1/8W1% RC55 REV:- DES REF: R29, R36		EA	P	S	2.000
		106-475-492	RES MF 54.9K 1/8W 1% RC55 DES REF: R14		EA	P	S	1.000
		106-472-492	RES MF 24.9K 1/8W1% RC55 REV:- DES REF: R45		EA	P	S	1.000

SLE LEVEL BILL FOR ITEM 106-405-100 OSCILLATOR BD ASSY REV:G

FND NO	ITEM NUMBER	DESCRIPTION	Q F	UNIT MEA	M/P	STYP	QUANTITY
	106-472-612	RES MF 26.1K 1/8W 1% RC55		EA	P	S	1.000
		DES REF: R13					
	106-466-102	RES CARB RCR07 1K REV:-		EA	P	S	2.000
		DES REF: R7,R27					
	106-466-512	RESISTOR CARB,RCR07,5.1K		EA	P	S	2.000
		DES REF: R8,20					
	106-466-105	RESISTOR, CARB, RCR07, 1M		EA	P	S	2.000
		DES REF: R10, R47					
	106-471-002	RES MF 10K 1/8W 1% RC55 REV:-		EA	P	S	12.000
		DES REF: R21,R22,R25,R30					
	9001	REF DESIGNATION		EA	M	S	0.000
		DES REF: R31,R32,R33,R37					
	\9002	REF DESIGNATION		EA	M	S	0.000
		DES REF: R41,R46,R48,R49					
	106-475-762	RES MF 57.6K 1/8W 1% RC55		EA	P	S	1.000
		DES REF: R19					
	106-466-333	RESISTOR, CARB, RCR07, 33K		EA	P	S	1.000
		DES REF: R24					
	106-466-103	RESISTOR, CARB, RCR07, 10K		EA	P	S	3.000
		DES REF: R26,R34,R38					
	106-471-001	RES MF 1K 1/8W 1% RC55 REV:-		EA	P	S	2.000
		DES REF: R28,35					
	106-464-502	POT,CERMET,3296W,MULTI		EA	P	S	2.000
		DES REF: R39,R40					
	100-588-012	RESISTOR DALE RS2B 25 OHM 5%		EA	P	S	1.000
		DES REF: R42					
	106-502-067	CAP ELEC,10UF 35V		EA	P	S	5.000
		DES REF: C1,2,6,7,14					
	106-634-102	CAP SILVER MICA DM15 1000PF		EA	P	S	2.000
		DES REF: C18, C22					
	106-481-104	CAP CERAM CKR06 0.1UF REV:A		EA	P	S	6.000
		DES REF: C3,C4,C5,C13					
	\9003	REF DESIGNATION		EA	M	S	0.000
		DES REF: C25,C27					
	106-480-102	CAP CERAM CKR05, 1000PF REV:-		EA	P	S	1.000
		DES REF: C8					
	106-481-334	CAP.CERAM, CKR06, .33UF		EA	P	S	1.000
		DES REF: C10					
	106-481-105	CAP 1UF CKR06BX105K REV:A		EA	P	S	2.000
		DES REF: C11,C28					
	106-480-101	CAP CERAM CKR05 100P REV:-		EA	P	S	1.000
		DES REF: C15					
	100-130-001	C PLCB .01MF 50V		EA	P	S	2.000
		DES REF: C12,26					
	100-128-024	CAP MICA 500V 100PF		EA	P	S	2.000
		DES REF: C16,C20					
	106-645-004	TERM BLK RT ANG 200 CL 4P		EA	P	S	5.000
		DES REF: P/O TB1					
	106-436-002	TERM BLOCK WIELAND 25.163.0253		EA	P	S	0.000
		DES REF: ALTERNATE					
	106-436-003	TERM BLOCK WIELAND 25.163.0353		EA	P	S	0.000
		DES REF: ALTERNATE					

NGLE LEVEL BILL FOR ITEM 106-405-100 OSCILLATOR BD ASSY REV:G

FND NO	ITEM NUMBER	DESCRIPTION	Q F	UNIT MEA	M/P	STYP	QUANTITY
	106-642-000	RELAY,DPST,W171DIP-25		EA	P	S	1.000
		DES REF: K1					
6 54	106-435-000	HEATSINK,TO-220		EA	P	S	1.000
	102-491-000	FET BS170 60V .5A		EA	P	S	1.000
		DES REF: Q1					
8	106-484-002	SHUNT, 2 POSITION		EA	P	S	0.000
		DES REF: XJP1 - XJP3					
56	MS51957-13	SCREW PAN HD #4-40 X .25		EA	P	S	1.000
57	2300019-004	NUT HEX 4-40		EA	P	S	1.000
1 59	100-096-006	SKT IC OPEN FRAME 20PIN		EA	P	S	2.000
		DES REF: XU6 XU8					
	106-405-001	SCHEMATIC DIA		EA	M	S	0.000
3	106-471-872	RES MF 18.7K 1/8W 1% RC55		EA	P	S	2.000
		DES REF: R50,R51					
	100-128-008	CAP MICA 500V 20PF		EA	P	S	1.000
		DES REF: C9					

SINGLE LEVEL BILL FOR ITEM 106-420-000 P.W.B. ASSY. DISPLAY REV: A

SEQ NO	FND NO	ITEM NUMBER	DESCRIPTION	Q F	UNIT MEA	M/P	STYP	QUANTITY
		106-420-000S	P.W.B. ASSY DISPLAY		EA	P	S	1.000
2	1	106-419-000	PWB,DISPLAY		EA	P	S	1.000
3	2	106-435-000	HEATSINK,TO-220		EA	P	S	1.000
4	3	100-007-002	NUT HEX KEP 4-40		EA	P	S	1.000
5	4	100-006-002	WASHR LK SPLIT #4		EA	P	S	1.000
6	5	100-000-003	SCREW PAN HD PHLP 4-40 X .500		EA	P	S	1.000
7	6	100-095-002	I.C. SOCKET SPC TECH 31N-29-19		EA	P	S	5.000
			DES REF: XDS1-XDS5					
8	7	106-432-006	CONN ELCO 00-9021-0611-00-392		EA	P	S	1.000
			DES REF: J1					
			ALTERNATE TO # 7 101-9546					
10	8	100-032-000	LED DISPLAY H.P. 5082-7613		EA	P	S	5.000
			DES REF: DS1-DS5					
11	9	101-463-000	I.C. MC7805CT REV:-		EA	P	S	1.000
			DES REF: VR1					
12	10	101-368-000	DIODE SWITCHING 1N914B		EA	P	S	1.000
			DES REF: CR1					
13	11	101-506-000	XTAL SRX1092 5.2488MHZ		EA	P	S	1.000
			DES REF: Y1					
14		106-531-000	I.C. HARRIS CA3140E		EA	P	S	1.000
			DES REF: U1					
15	13	101-446-000	I.C., MC14046BCP REV:A		EA	P	S	1.000
			DES REF: U2					
16	14	101-450-000	I.C. HARRIS CD4518BE		EA	P	S	1.000
			DES REF: U3					
17		101-489-000	I.C. HARRIS ICM7207AIPD		EA	P	S	1.000
			DES REF: U4					
18	16	101-519-000	I.C. HARRIS ICM7208IPI		EA	P	S	1.000
			DES REF: U5					
19		100-588-012	RESISTOR DALE RS2B 25 OHM 5%		EA	P	S	1.000
			DES REF: R1					
20	18	100-193-060	RES MF 1% 1/4W 20K OHM		EA	P	S	2.000
			DES REF: R2,R3					
21	19	100-193-051	RES MF 1% 1/4W 10K OHM		EA	P	S	1.000
			DES REF: R4					
22	20	100-193-015	RES MF 1% 1/4W 1K OHM		EA	P	S	2.000
			DES REF: R5,R10					
23	21	100-193-005	RES MF 1% 1/4W 147 OHM		EA	P	S	1.000
			DES REF: R6					
24	22	100-193-024	RES MF 1% 1/4W 2.61K OHM		EA	P	S	1.000
			DES REF: R7					
25	23	100-193-074	RES MF 1% 1/4W 51.1K OHM		EA	P	S	1.000
			DES REF: R8					
26	24	100-193-025	RES MF 1% 1/4W 3.01K OHM		EA	P	S	1.000
			DES REF: R9					
27	25	100-193-115	RES MF 1% 1/4W 1 MEG OHM		EA	P	S	1.000
			DES REF: R11					
28	26	100-193-002	RES MF 1% 1/4W 100 OHM		EA	P	S	1.000
			DES REF: R12					
29		106-502-067	CAP-ELEC,10UF 35V		EA	P	S	2.000
			DES REF: C1 C2					
30	28	100-154-000	CAPACITOR AVX SR205E104MAA		EA	P	S	3.000
			DES REF: C3,4,6					

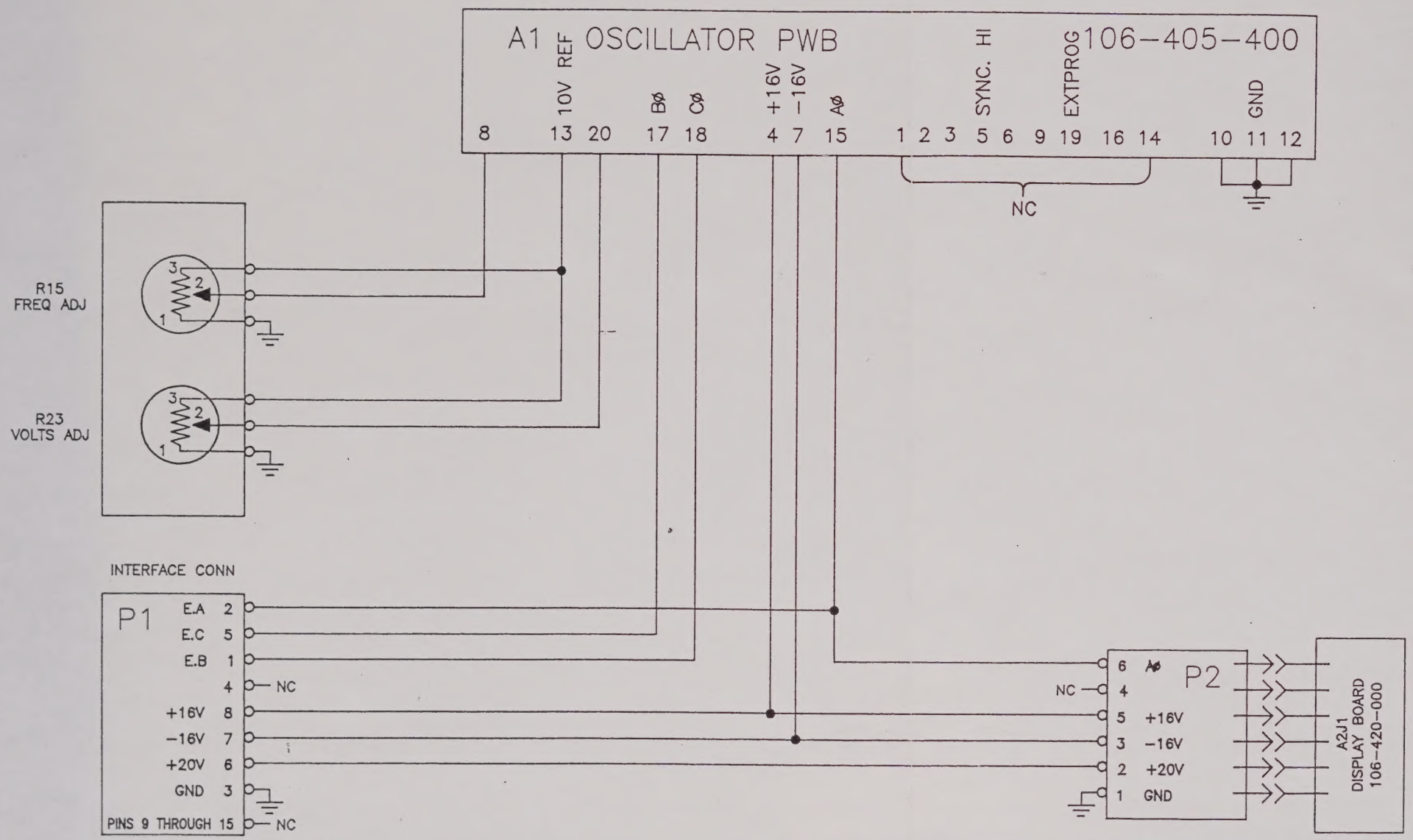
LE LEVEL BILL FOR ITEM 106-420-000 P.W.B. ASSY. DISPLAY REV: A

FND NO	ITEM NUMBER	DESCRIPTION	Q F	UNIT MEA	M/P	STYP	QUANTITY
29	100-128-005	CAPACITOR MICA CM05		EA	P	S	3.000
		DES REF: C5,7,10					
	106-502-055	CAP, ELEC,22UF 25V		EA	P	S	1.000
		DES REF: C8					
31	100-128-020	CAP MICA 500V 68PF		EA	P	S	1.000
		DES REF: C9					
32	100-128-009	CAP CM05ED240J03		EA	P	S	1.000
		DES REF: C11					
	106-418-000	SCHEMATIC DIA		EA	M	S	0.000
		* NOTE: WHEN ALTERNATE IS USED ON THIS ASSY, IT MATE MUST ALSO BE USED SEE ALTERNATE ON PL'S 106-410-300 & 106-410-400					

SINGLE LEVEL BILL FOR ITEM 106-420-000 P.W.B. ASSY. DISPLAY REV: A

SEQ NO	FND NO	ITEM NUMBER	DESCRIPTION	Q F	UNIT MEA	M/P	STYP	QUANTITY
30	29	100-128-005	CAPACITOR MICA CM05 DES REF: C5,7,10		EA	P	S	3.000
32		106-502-055	CAP. ELEC,22UF 25V DES REF: C8		EA	P	S	1.000
33	31	100-128-020	CAP MICA 500V 68PF DES REF: C9		EA	P	S	1.000
34	32	100-128-009	CAP CM05ED240J03 DES REF: C11		EA	P	S	1.000
35		106-418-000	SCHEMATIC DIA		EA	M	S	0.000
36			* NOTE: WHEN ALTERNATE					
37			IS USED ON THIS ASSY, IT					
38			MATE MUST ALSO BE USED					
39			SEE ALTERNATE ON PL'S					
40			106-410-300 & 106-410-400					

REV STATUS OF SHT		REVISIONS				
REV	SHT	ZONE	LTR	DESCRIPTION	DATE	APPROVED
			A	ECO 91-203	91-10-10	



		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES: FRAC ± 3 PLACE DEC ± 2 PLACE DEC ± ANGLES ±	CONTR	BEHLMAN An Astrosystems Company
			DR JA DATE 91-03-20	OSCILLATOR WIRE DIAG.
		DO NOT SCALE THIS DWG	CHK JB DATE 91-03-20	
	106-410-300	MATERIAL	APPD DM DATE 91-03-21	SIZE B · CODE IDENT NO. 53636 · 106-421-300 · REV A
NEXT-ASSY	USED ON			SCALE NONE · SHEET
APPLICATION				

BRUNING 78710 FORM # 5997

BEHLMAN